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Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/551,108
Filing Date: July 11, 2006
Appellant(s): DIETRICH ET AL.

William G. Conger
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 19, 2010 appealing from the Office action mailed December 21, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 16-20, 22-29 and 31-35 are pending in this application and have been rejected and are the subject of this appeal.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

EP 0 792 950 A1	Hirata et al	09-1997
6,166,113	Haerzschel et al	12-2000
4,137,088	Debus et al	01-1979

Derwent Abstract of JP 09-249442, Okazaki, January 1994

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. **Claims 16-23, 25, 27, and 29-32** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hirata et al (EP 0 792 850 A1)**.

Regarding claim 16-20 and 31-32, Hirata teaches a copolymer which is used in cement (Abstract) which has

- (component a) 5-90% by weight (page 3, lines 5-15) of a carboxylic acid such as acrylic acid or methacrylic acid (page 7, lines 30-35)

- (component b) 0-50% by weight of another monomer (page 3, lines 17-20) such as 2-methyl propane sulfonic acid (meth) acryl amide and (meth) allyl sulfonic acid (page 7, line 44)
- (component c) 5-90% by weight of a first polyalkylene glycol (meth)acrylate (page 2, line 30-45) in which can have an oxyalkylene group of 2, therefore the repeat unit would be a polyethylene glycols. The number of repeat units ranges from 1-97 (page 2, lines 45) and the terminal group can be an OH or an OR, where R can be an alkyl group having 1-22 carbons (page 2, line 45).
- (component d) 5-90% by weight of a second polyalkylene glycol (meth) acrylate in which the polyalkylene glycol repeat units can be homopolymers of C3 and C4 oxyalkylene groups (page 2, line 47 - page 3, line 5) or mixtures thereof, the repeats numbering 4-100 (page 5, line 5), terminal group can be an OH or an OR, where R can be an alkyl group having 1-22 carbons (page 3, lines 1-5).

While it is recognized that the phrase "consisting essentially of" narrows the scope of the claims to the specified materials and those which do not materially affect the basic and novel characteristics of the claimed invention, absent a clear indication of what the basic and novel characteristics are, "consisting essentially of" is construed as equivalent to "comprising". Furthermore, the burden is on the applicant to show that the additional ingredients in the prior art would in fact be excluded from the claims and that such ingredients would materially change the characteristics of the applicant's invention. See for example, MPEP 2111.03. Case law also holds that "[i]f an applicant contends that additional steps or material in the prior art are excluded by the recitation of

'consisting essentially of,' applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention." *In re De Lajarte*, 337 F.2d 870, 143 USPQ 256 (CCPA 1964).

Regarding claim 21, Hirata teaches that the monomer used as component d of the instant claim can be methoxy polyethylene glycol (poly) propylene glycol moo(meth)acrylate (Page 7, lines 17-25), thus teaching a polyethylene end capped polypropylene glycol mono(meth)acrylate.

Although Hirata teaches that the total number of glycol repeat units is from 4-100 (page 7, line 29), it fails to teach the exact number of repeat units of the polyethylene glycol or the polypropylene glycol.

However, it is well known in the art to optimize result effective variables such as the number of repeat units in the polyoxyalkylene glycol. See MPEP 2144.05. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have optimized the relative repeat units of polyoxyethylene glycol and the polypropylene glycol, and the motivation to so would have been, as Hirata suggests, to change the water reducing rate and the stereo repulsion and hydrophilicity (Page 7, lines 25-30).

Regarding claim 22, Hirata also teaches that the 0 – 50 % by weight monomer (page 3, lines 17-20) can be esters of aliphatic alcohols, such as benzyl methacrylate (page 7, line 46).

Regarding claim 23, as Hirata teaches all the elements of the claimed invention, It is therefore inherent that the prior art composition as the desired storage modulus G'

and loss modulus G" since such properties are evidently dependent upon the nature of the composition used. Case law holds that a material and its properties are inseparable. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 25, Hirata teaches that the dispersant of claim 16 is used in a hydraulically settable mortar composition (Abstract).

Regarding claim 27, Hirata teaches that the dispersant of claim 16 is used in a construction chemical composition which comprises Portland cement (page 15, line 17).

Regarding claim 29, since Hirata teaches the same composition as instantly claimed, it is therefore inherent that the prior art composition has the desired plasticizing action since such a property is evidently dependent upon the nature of the composition used. Case law holds that a material and its properties are inseparable. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 30, since Hirata teaches the same composition as instantly claimed, it is therefore inherent that the prior art composition has the desired solubility in various aqueous medium since such a property is evidently dependent upon the nature of the composition used. Case law holds that a material and its properties are inseparable. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

2. **Claims 24 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hirata et al (EP 0 792 850 A1)** in view of **Haerzschel et al (US 6,166,113).**

The discussion regarding Hirata in paragraph 2 above is included here by reference.

Regarding claims 24 and 26, Hirata teaches the claimed polymeric dispersant (please refer to the rejection of claim 16) and also teaches that the polymeric dispersant can be in an aqueous solution (page 8, lines 3-20), however, fails to teach a process for spray drying the dispersant with a polymer dispersion and an atomization aid.

Haerzschel teaches a polyvinyl alcohol stabilized by vinyl ester-acetate dispersion (col. 4, lines 5-15 and (col. 3, lines 45-60) are added as a protective colloid/atomization aid (col. 4, line 14) into which dispersants can be added (col. 4, line 58) and can be made into powders by spray drying (col. 4, lines 1-5).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the polyvinyl alcohol stabilized vinyl ester acetate protective colloid as taught by Haerzschel with the dispersant of Hirata in a spray drying process of Haerzschel. One would have been motivated to do so in order to receive the expected benefit of obtaining a highly flexible building compositions with have good strength and a significantly higher extensibility (col. 2, lines 20-25). They are combinable because they are both concerned with the same field of endeavor, namely dispersants in building materials.

3. **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hirata et al (EP 0 792 850 A1)** in view of **Debus et al (US 4,137,088).**

The discussion regarding Hirata in paragraph 2 above is included here by reference.

Regarding claim 28, although Hirata teaches that the dispersant of claim 16 is used in a construction chemical composition which comprises Portland cement (page

15, line 17), it fails to teach that the composition is a self-leveling floor filler or a flowable screed.

Debus teaches that a composition which is a plasticizing water containing, setting building materials (Abstract) which can be made into a flowable screed (col. 4, line 65).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the water content of Hirata in order to obtain a flowable screed as taught by Debus. One would have been motivated to do so in order to receive the expected benefit of obtaining a composition with the flow rate appropriate to certain applications. They are combinable because they are concerned with the same field of endeavor, namely plasticizers in cememtious materials.

4. **Claims 33-35** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hirata et al (EP 0 792 850 A1)** in view of **Okazaki (Derwent Abstract of JP 09-249442).**

The discussion regarding Hirata in paragraph **Error! Reference source not found.** is incorporated here by reference.

Regarding claims 33-35, Hirata teaches that the dispersant is used in Portland cement (page 9, lines 30-35), however fails to teach the addition of a redispersible polymer powder such as an ethylene/vinyl acetate copolymer.

Okazaki teaches the addition of an ethylene-vinyl acetate copolymer to a Portland cement composition (Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the ethylene-vinyl copolymer of Okazaki with the dispersant

taught by Hirata. One would have been motivated to do so in order to receive the expected benefit of improving the bending strength and reduce the shrinkage factor (Okazaki, Abstract). They are combinable because they are both concerned with the same field of endeavor, namely polymers that are incorporated into Portland cement.

(10) Response to Argument

Appellant's argument: Hirata is not directed to compositions which both retain slump and mimic the behavior of casein. The embodiments of Hirata, none of them have any relevance to the claimed invention. None of the embodiments contain an ethylenically unsaturated sulfate or sulfonate.

Examiner's response: *The fact that Hirata does not explicitly teach that the compositions disclosed in its specification retain slump and mimic the behavior of casein, two things are note. First, it is noted that Hirata teaches all the claimed elements of the presently claimed invention as elucidated in the above rejection and as such is an appropriate rejection as set forth. Second, the fact that Hirata does not explicitly teach compositions which have applicant's desired property is not persuasive because as Hirata teaches all the elements of the claimed invention, the mimicry of casein would naturally flow from the prior art composition. Also, regarding the casein-like property of the presently claimed invention, as the prior art has taught all the elements of the claimed invention, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See Ex parte Obiaya, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Although the embodiments do not*

contain the ethylenically unsaturated sulfate or sulfonate monomer, it is clearly taught as a possible comonomer in the specification of Hirata.

Appellant's argument: Hirata includes hundreds, if not thousands of copolymerizable monomers d) (which is a polyalkylene glycol consisting of 1 to 300 C_{3-4} oxyalkylene units). No less than seven distinct classes of monomers are recited in the Hirata disclosure. Would Hirata direct the skilled artisan to the claimed composition? The answer is "no".

Examiner's response: *Although Hirata has multiple possibilities of monomer combinations, the sum total of these is still finite and there are predictable outcomes from them and as such, the examiner maintains that Hirata does teach all the limitations of the claimed invention and, as such, reads on the claimed invention. In order for the applicant to persuasively argue that the presently claimed invention, the applicant must show data that is commensurate in scope to the claimed invention as well as show criticality of the claimed invention.*

The following chart indicates the claimed invention and the data presented in the specification of the presently claimed invention:

Presently claimed invention *(note that monomer e) is not mandatory hence omitted purely for the sake of discussion):*

a) 5 to 70 wt. % of one or more monomers selected from the group consisting of ethylenically unsaturated monocarboxylic acids, ethylenically unsaturated carboxamides, ethylenically unsaturated C_{4-8} dicarboxylic acids and anhydrides thereof, and (meth)acrylate monoesters of C_{2-6} dialcohols;

b) 1 to 40 wt. % of one or more monomers selected from the group consisting of ethylenically unsaturated compounds with sulfonate or sulfate functional groups,

c) 10 to 80 wt. % of one or more monomers selected from the group consisting of ethylenically unsaturated compounds of homopolyoxyethylene glycols with 1 to 300 oxyethylene units and terminal groups selected from the group consisting of OH-groups and ether groups –OR' and mixtures thereof, wherein R' is an alkyl, aryl, alkaryl or aralkyl residue with 1 to 40 C atoms,

d) 5 to 80 wt. % of one or more monomers selected from the group consisting of ethylenically unsaturated compounds of polyoxyalkylene glycols consisting of 1 to 300 C_{2-4} oxyalkylene units and terminal groups selected from the group consisting of OH-groups and ether groups –OR' and mixtures thereof, wherein R' is an alkyl, aryl, alkaryl or aralkyl residue with 1 to 40 C atoms, and,

Inventive examples contain:

Acrylic acid, methacrylate-polyethylene glycol methyl ether (45 EO units), 2-acrylamido-2-methylpropane sulfonate, and methacrylate-polypropylene glycol (9 PO) units.

Comparative examples contain:

V1*: polyvinyl alcohol-stabilized vinyl acetate-ethylene copolymer + mesh*

V2: *polyvinyl alcohol-stabilized vinyl acetate-ethylene copolymer + methacrylic acid/methoxy-polyethylene glycol methacrylate (about 17 mols of ethylene oxide)*

V3*: styrene-butyl acrylate copolymer + protective colloid made from a water-soluble methacrylic acid/methyl methacrylate hydroxyethyl-methacrylate*

First it is noted that applicant's inventive examples are not commensurate in scope to the claimed inventions, note that the number of types of monomers possible in the independent claim is quite large, yet the data provide in all 8 inventive examples are much narrower in scope to the claimed invention. Thus applicant's showing of improved properties is not persuasive over the entire scope of the claim. It is the examiner's position that the disclosure of Hirata is no less broad than the applicants' claimed invention. As to the showing of criticality, it is noted no conclusion of unexpected results can be drawn from comparing the comparative examples with the inventive examples, as the comparative examples do not even contain a single monomeric component in common with the inventive examples. It is not surprising or unexpected, that the presently claimed invention behaves differently from a polymeric dispersant which is completely different than the inventive examples. Thus, the argument of criticality is not persuasive.

Appellant's argument: In the embodiments of Hirata, they employ two polyoxyethylene glycol comonomers. The disclosure of Hirata discloses a myriad of permutations and combinations of just the two ethylenically unsaturated polyoxyalkylene monomers.

Examiner's response: *Applicant's argument pertains to the criticality of the two types of polyoxyalkylene monomer, one a polyoxyethylene and the other a polypropylene monomer. However, as indicated above, as the Hirata reference teaches that the polymer can contain these two type of monomer (even though the embodiments may only show two polyoxyethylene glycol copolymer), it is the examiner's position that*

the prior art reads on the claimed invention. It is incumbent on the applicant to show the criticality of the two monomer combination as presently claimed. As the data shown in the specification, as noted above, is neither commensurate with the scope of the claimed invention, nor provides the examiner enough information to conclude whether the polyoxyethylene/polypropylene combination is indeed critical to the performance of the claimed invention, the applicants' argument is not persuasive.

Appellant's argument: The forth comonomer, can be any monomer copolymerized with a), b), and c). The number of possibilities is enormous.

Examiner's response: *As indicated above, as the Hirata reference teaches that the polymer contains all the monomers as presently claimed, it is the examiner's position that the prior art reads on the claimed invention. It is incumbent on the applicant to show the criticality of the monomer combination as presently claimed. As the data shown in the specification, as noted above, is neither commensurate with the scope of the claimed invention, nor provides the examiner enough information to conclude whether the polyoxyethylene/polypropylene combination is indeed critical to the performance of the claimed invention, the applicants' argument is not persuasive.*

Appellant's argument: The examiner has used improper hindsight reasoning to arrive at the presently claimed invention and has used applicant's invention to select a copolymer of Hirata to formulate a casein mimic.

Examiner's response: *The examiner has only used the teachings that are explicitly taught in Hirata to arrive at the present invention. Hirata teaches all the monomers as presently claimed as well as all the amount of each of the monomers. In*

response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). It is noted that although the applicant has discovered that the presently claimed invention is can mimic a casein material, the fact that the applicant have discovered a new property based on an old composition does not make the old composition patentable. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. casein mimic) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Appellant's argument: A comparison was made to several products within the scope of Hirata and Appellants' products were surprisingly superior.

Examiner's response: *The examiner has looked at the comparative examples in the present specification and the examiner disagrees that the comparative examples are within the scope of the prior art Hirata. Most notably, none of the comparative examples have two types of polyoxyalkylene monomers (pages 16-17 of the instant specification) and as such, applicant's argument is not persuasive.*

Appellant's argument: Using a KSR argument, applicant argue that the possibilities of Hirata offer an enormous number of choices, whereas KSR test represents a limited number of choices.

Examiner's response: *The examiner has not invoked KSR in this rejection, however, to address the applicant's argument, please refer to MPEP section 2141 (III) where it states that prior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. The prior art reference (or references when combined) need not teach or suggest all the claim limitations, however, the Office personnel must explain why the differences(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. Although Hirata has multiple possibilities of monomer combinations, the sum total of these is still finite and there are predictable outcomes from them and as such, the examiner maintains that Hirata does teach all the limitations of the claimed invention and, as such, reads on the claimed invention*

Appellant's argument: Haerzschel does not teach or suggest adding a particulate cement plasticizer to a polymer dispersion and spray drying the composition.

Examiner's response: *The examiner does not use Hirata's polymers as the protective colloid of Haerzschel. Rather, the polymer of Hirata is used as dispersants which can be added to the composition of Haerzschel as indicated in col. 4, line 58. The motivation to combine Hirata with Haerzschel is set forth in the rejection above; in order to receive the expected benefit of obtaining a highly flexible building composition which have good strength and significantly higher extensibility (col. 2, lines 20-25).*

Appellant's argument: Haerzschel and Debus cannot be combined because they teach in mutually exclusive directions.

Examiner's response: *These two references are combinable because they are concerned with the same field of endeavor, namely plasticizers in cementious materials.*

Appellant's argument: No English translation is provided for the underlying Japanese language patent. Neither Hirata nor the abstract of Okazaki teach or suggest any composition including both an RDP and the Appellant's plasticizer.

Examiner's response: *The examiner has rejected the claim over the Derwent abstract and not the Japanese patent. The Derwent abstract is, in itself, a valid piece of published prior art. The combination of the two references teaches both the RDP (Okazaki) and the Appellant's plasticizer (Hirata). Hirata teaches that the dispersant is used in Portland cement (page 9, lines 30-35), however fails to teach the addition of a redispersible polymer powder such as an ethylene/vinyl acetate copolymer. Okazaki teaches the addition of an ethylene-vinyl acetate copolymer to a Portland cement composition (Abstract).*

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Doris L Lee/

Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796

Conferees:

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